Principles of Meteorology

Meteorology · Answer Key · 25 Questions

1. What is the primary gas by volume in the Earth's atmosphere?

A) Oxygen
B) Argon
C) Nitrogen
D) Carbon Dioxide

2. Which layer of the atmosphere contains the ozone layer that absorbs ultraviolet radiation?

A) Troposphere
B) Stratosphere
C) Mesosphere
D) Thermosphere

3. What is the name of the process by which water vapor turns into liquid water droplets?

A) Evaporation
B) Sublimation
C) Condensation
D) Transpiration

4. Which instrument is used specifically to measure atmospheric pressure?

A) Anemometer
B) Hygrometer
C) Barometer
D) Pyranometer

5. What defines the 'dew point' temperature?

A) The boiling point of water
B) The temperature at which air becomes saturated
C) The temperature when ice melts
D) The freezing point of sea water

6. The Coriolis effect is primarily caused by which of the following?

A) The Earth's rotation
B) Solar radiation
C) Ocean currents
D) Volcanic activity

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7. Which type of cloud is characterized by a flat, featureless, sheet-like appearance often covering the entire sky?

A) Cumulus
B) Stratus
C) Cirrus
D) Cumulonimbus

8. What is the term for the boundary separating two different air masses?

A) Isobar
B) Front
C) Trough
D) Ridge

9. In which atmospheric layer does almost all of Earth's weather occur?

A) Thermosphere
B) Mesosphere
C) Stratosphere
D) Troposphere

10. What scale is used to classify the intensity of tornadoes based on damage?

A) Saffir-Simpson Scale
B) Beaufort Scale
C) Enhanced Fujita Scale
D) Richter Scale

11. What does a hygrometer measure?

A) Wind speed
B) Relative humidity
C) Precipitation
D) Solar radiation

12. Which phenomenon describes the warming of the central and eastern tropical Pacific Ocean?

A) La Niña
B) El Niño
C) Jet Stream
D) Trade Winds

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13. What are lines on a weather map that connect points of equal atmospheric pressure called?

A) Isotherms
B) Isohyets
C) Isobars
D) Isotachs

14. Which gas is the most significant greenhouse gas contributing to anthropogenic climate change?

A) Nitrous oxide
B) Methane
C) Carbon dioxide
D) Ozone

15. What is the standard unit of measurement for air pressure in meteorology?

A) Pascal
B) Hectopascal
C) Newton
D) Joule

16. Which global wind belt is found between 30 and 60 degrees latitude?

A) Trade winds
B) Polar easterlies
C) Westerlies
D) Doldrums

17. What is the name of the high-altitude, fast-moving 'river' of air that influences weather patterns?

A) Trade winds
B) Jet stream
C) Monsoon
D) Sea breeze

18. What happens to air pressure as altitude increases?

A) It remains constant
B) It increases
C) It decreases
D) It fluctuates randomly

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19. Which form of precipitation consists of ice pellets smaller than 5mm?

A) Hail
B) Sleet
C) Graupel
D) Snow

20. What is the dry adiabatic lapse rate of unsaturated air?

A) 6.5°C per 1,000m
B) 9.8°C per 1,000m
C) 3.5°C per 1,000m
D) 0°C per 1,000m

21. What characterizes an anticyclone?

A) Low pressure center with inward winds
B) High pressure center with outward winds
C) Rapid vertical convection
D) High levels of precipitation

22. What causes the formation of sea breezes during the day?

A) Ocean water heating faster than land
B) Land heating faster than ocean water
C) High pressure over land
D) Uniform heating

23. What is 'albedo' in the context of climate science?

A) The heat capacity of water
B) The reflectivity of a surface
C) The density of air
D) The chemical composition of clouds

24. Which layer of the atmosphere is where most meteors burn up?

A) Troposphere
B) Stratosphere
C) Mesosphere
D) Exosphere

25. What is the term for a tropical cyclone that forms in the northwest Pacific Ocean?

A) Hurricane
B) Cyclone
C) Typhoon
D) Willy-willy

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